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AN EXTENSION PROGRAM FOR RANGE MANAGEMENT AND RANGE LIVESTOCK AS ADOPTED AT A REGIONAL EXTENSION CONFERENCE HELD AT SPOKANE, WASH., MAY 24-27, 1937

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A BIT OF HISTORY

At the meeting of the Land-Grant College Association in Washington, D. C., in November 1922, a group of western extension directors and the regional agent for the Western States were lunching together. They were discussing a program for a Western States extension conference to be held some time during 1923. The talk turned to the extension projects that should receive special emphasis in view of existing conditions. This disclosed a wide variety of projects in the several States but also a most remarkable community of objective. Someone, perhaps a bit of a philosopher, remarked, "Isn't this group of Western States something more than just an administrative division of the Extension Service—something more than a geographic subdivision of the United States? Isn't the West, in a way, an economic unit with common problems, and might not the Western States have such a community of interest as to warrant a regional approach to program making instead of a community, county, or State approach?" The table talk became very stimulating. One member of the group suggested that the West was a sparsely settled region, and for that reason, extension work was quite different and community effort more difficult; another, that, as a rule, the region had scanty rainfall, hazardous in many seasons for the growing crops; another, that it was almost uniformly a high-altitude section; another that the West had a long distance to go to market; and still another, that the West always would be predominantly a range-livestock country—and so it went.

Long after the afternoon land-grant program was under way the luncheon discussion continued.

The net result of this luncheon conference was the appointment of a committee to develop a program and inventory the possibilities of a regional approach to program making. It was decided that range livestock was to be one of the subjects for the conference because this subject predominated in almost every State concerned. During the following months plans were developed and range councils were appointed in each of the State colleges to bring together all the research work of the experiment stations bearing on the range problem. A similar committee was appointed in the United States Department of Agriculture.

The conference was held at Fort Collins, Colo., November 5 to 9, 1923. Here all the material developed by the States and the Department committees was assembled and for 3 days it was analyzed and discussed.¹ In addition to the State representatives there were 18 scientists and administrative officers from the Bureaus of Agricultural Economics, Plant Industry, Forest Service, Biological Survey, and Weather, and the Extension Service, of the Department of Agriculture.

So was born the regional approach to the consideration of agricultural problems. It was an inconspicuous beginning, but the novelty of it attracted widespread attention. Fourteen years ago this regional approach may to some have seemed provincial, but it needs no apologist now.

Since 1920, several of the Western States had been holding both county and State fact-organization conferences as a preliminary to developing extension programs. In his 1924 report to the President, the Secretary of Agriculture devoted a paragraph to the western development:

In the earlier years of extension work much attention was given to community and county programs for agricultural and home economics extension. During the past 2 years these local programs for agriculture have been expanded to a State-wide basis in several States. The most successful development of State agricultural programs has been in those States where a thorough survey was made of all available facts on present and possible future production, marketing facilities, and other factors which influence the establishment and maintenance of successful agriculture. These facts, when assembled, are presented to a conference composed not only of agricultural leaders and representative farmers, but of representatives of bankers' associations, railroads, business interests, livestock associations, and all other agencies in any way related to agriculture. Committees of the conference then work out programs for particular phases of agriculture such as horticulture or dairying, and finally the several committee reports are united into a unified agricultural program for the State. This State program is then taken back to the counties and is adapted there to local needs. Western extension workers have gone further than this and have outlined an extension program in dairying, human nutrition, and range livestock production in the 11 Western States. (Yearbook, 1924, pp. 51 and 52.)

The Fort Collins conference, before adjourning, appointed regional standing committees on range livestock, dairying, and human nutrition and provided for a yearly review of the program. In succeeding conferences for the next 8 years, other phases of western agriculture were similarly considered and regional programs adopted. The

¹ LLOYD, W. A. AN EXTENSION PROGRAM IN RANGE LIVESTOCK, DAIRYING, AND HUMAN NUTRITION FOR THE WESTERN STATES. U. S. Dept. Agr. Cir. 308, 14 pp., illus. 1924.

extension services of the Western States began to think and act as a unit. By and large, the West does not loom large in the Nation's agriculture. The Middle States and the South contribute the great bulk of agricultural products except in a few specialized lines. It was often difficult for the West to make its voice heard across the continent, and these States sometimes felt they were the "forgotten area" in the Nation's agricultural councils. This isolation helped in bringing about this cooperative effort. The Fort Collins conference and succeeding ones helped to put the West on the map of the Department of Agriculture.

After 6 years, the range-livestock program was reviewed, revised, and reaffirmed at State College, N. Mex., in 1929. Now, after an 8-year period, we are again sitting in common council in regard to this great western industry. In the intervening period many newly created functions of Government have been organized with relation to our problem. Some of these, like those developed as a result of the Taylor Grazing Act, are almost the direct outgrowth of our effort. At the Reno, Nev., regional extension conference in 1924, the regional livestock committee in its report said:

Again the development of range-livestock extension work is seriously handicapped because of the want of a settled public-land policy. It is therefore suggested that a fact-finding committee be appointed by the President of the United States to investigate the whole subject of the most desirable public policy to be pursued in regard to the remaining public land.

A committee consisting of Director Creel, of Nevada, Director Peterson, of Utah, and the late Director Nelson, of Washington, was appointed to present our recommendations to President Coolidge. The result was a comprehensive study of the public-land resources of the West with Director Peterson as a member of the President's commission. The report of this body has made land-use history in the West. Then there are the Resettlement Administration,² with its far-flung activities; the C. C. C. camps; the Soil Conservation Service; the new land policy of the Office of Indian Affairs; the enlarged activities of the Bureau of Biological Survey and the Forest Service; and the range-livestock program of the Agricultural Adjustment Administration. Representatives of these and other governmental agencies were at Spokane to tell of their plans and with these plans before them they recast the Western States regional program to keep it in line with latest developments.

The great agricultural depression of the past few years and the many obligations assigned to the Extension Service have to a considerable degree diverted attention from the great regional effort initiated 14 years ago at Fort Collins, Colo. Now, as we are emerging from those dark days, may we not rededicate ourselves to the common objectives of our regional program and with new information, new organizations, enlarged resources, and clearer vision, go forward again for the welfare of the West, its security, its prosperity, its progress. In the words of President Roosevelt, dedicate ourselves to the task that needs doing "now." Again we unfurl our banner with our old slogan which is still true, "The West must grow the best." And to it we will now add, "The West must live the best."

² Now Farm Security Administration.

THE PRESENT EXTENSION PROGRAM IN RANGE LIVESTOCK, WESTERN STATES

The Spokane conference followed a somewhat different procedure from either the original Fort Collins conference of 1923 or the review of the Western States regional range program made at State College in 1929. The first day and a half of the Spokane conference was devoted to a formal presentation by leaders of various Government agencies. The speakers included Lewis C. Gray, Director, Land Utilization Division, Resettlement Administration³ (material presented by Rex Willard, Land Utilization Division); John C. Page, Commissioner, Bureau of Reclamation, Department of the Interior; and the following representatives of the United States Department of Agriculture: George E. Farrell, Director, Western Division, Agricultural Adjustment Administration; W. C. Henderson, Associate Chief, Bureau of Biological Survey; Hugh H. Bennett, Chief, Soil Conservation Service; W. W. McLaughlin, Chief, Division of Irrigation, Bureau of Agricultural Engineering; Walter L. Dutton, Division of Range Management, Forest Service; J. K. Wallace, senior marketing specialist, Bureau of Agricultural Economics; D. C. Mumford, extension economist; and W. K. Williams, extension forester. Harry L. Brown, Assistant Secretary of Agriculture; C. W. Warburton, Director of Extension Work; and W. A. Lloyd, principal agriculturist in charge, Western Section, Division of Cooperative Extension, also addressed the conference. After these presentations, the extension directors of each of the 11 Western States and of Alaska and Hawaii made a review of extension work with relation to range management or to range livestock during the 14-year period since the Fort Collins conference. These reviews were followed by a presentation, by a specialist from each State, of a range extension project illustrating methods of procedure. All addresses and reports were submitted in mimeographed form and were made available in bound volumes to each State for reference.

Various segments of the range program were considered by special committees as follows: Range livestock (sheep and cattle subcommittees), and range management (agronomy, forestry, and irrigation). The reports of these committees were referred to a coordinating committee, which submitted its report to the conference for consideration. The report as adopted follows.

REPORT OF COMMITTEE ON RANGE LIVESTOCK

The fundamental objectives of the range-livestock program are to foster more efficient breeding, feeding, and marketing of range animals, and to develop systems of range and ranch management that will bring about better balance between range and farming lands, thereby promoting better land use to advance the stability of western agriculture.

The committee believes that the tendency toward restriction of livestock numbers on such ranges, and the tendency of the programs of agricultural conservation to adjust the production of feed grains

³ See footnote 2.

makes the following items of the general livestock extension program especially important at this time:

1. Selective breeding and culling and production of more efficient animals.
2. Greater utilization of products of western farms by range livestock.
3. Prevention of livestock losses.
4. More recognition of the type and extent of market demand for various classes and grades of livestock products.

OUTLINE OF RECOMMENDED PROGRAM

1. Breeding.

Promote definite breeding programs to increase the efficiency of the breeding unit, in the production of calves, lambs, and wool.

- (a) More sires of superior type and quality, from herds with background of performance.
- (b) Elimination of inferior sires.
- (c) Selective mating for production of replacements.
- (d) Systematic culling of females and sires.
- (e) Definite breeding seasons.
- (f) Segregation of yearling heifers on the range from breeding herd.
- (g) Dehorning of all market cattle at an early age.
- (h) 4-H Club projects involving development of range sires.

2. Feeding for growth and maintenance.

Provide necessary supplements to promote constant growth and development of young stock, and maintain breeding animals in proper condition to reproduce normally.

- (a) Proper time to start feeding.
- (b) Proper kind and amounts of supplements.
- (c) Maintain reserve feed supplies for emergency.
- (d) Minerals.

3. Feeding for market.

- (a) Make maximum use of locally produced feeds.
- (b) Adjust methods, rations, and classes of animals fed, to kinds of finishing feeds available.
- (c) Confine 4-H feeding clubs to areas where finishing feeds are available.

4. Grazing of cropland and meadowland.

Where applicable, encourage the diversion of some cropland, including meadows to grazing purposes with the following objectives:

- (a) To relieve the range.
- (b) To afford greater opportunity for use of improved production practices.
- (c) To aid in lengthening the market season.

5. Prevention of losses.

- (a) Parasite control.
- (b) Nutrition deficiencies.
- (c) Disease prevention and control.
- (d) Prevention of shipping losses.
- (e) Predatory-animal control.
- (f) Poisonous-plant and noxious-weed control.
- (g) Exposure.
- (h) Starvation.

6. Marketing.

Assist in orderly marketing of western cattle, lambs, and wool through the following activities:

- (a) Acquaint producers with type and extent of demand in various markets.
- (b) Conduct market-grading demonstrations to emphasize United States standard grades, and explain their best utilization.
- (c) In direct sales, to encourage sorting of animals before inspection by buyers.
- (d) Disseminate information—

- (1) On long-time trends and cycles of production and on reaction of producers to varying prices; on changes in consumption (as wool) based on consumers' preferences, factors affecting the demand for feeders, seasonal movements from various areas, competition within the industry and from other meats, other foods, and other products, and competition from other countries.

- (2) On current prices at various markets and for various grades, on prices at which feeders, wool, etc., are being contracted for future delivery, on methods of keeping posted on prices and price trends, and on the use and interpretation of market statistics.
- (e) Cooperate with home-economics staff on programs for better utilization of meat and wool products.
7. Ranch management.
 - (a) Encourage ranch-efficiency studies as general background for a range-livestock program.

RECOMMENDED METHODS

In carrying out this program, the committee suggests the adoption of the following methods:

1. Use of existing Western State and Federal experimental results as demonstration material.
2. County agent field conferences or tours on well-managed range units to observe methods of handling livestock and range management.
3. Use of successful ranches as demonstrations. Establish district demonstrations or tests on typical ranches for use of two or more counties.
4. Use of 4-H Club work as a demonstration agency for promoting range-livestock programs.
5. Full utilization of extension news service for disseminating progress of range programs.
6. Tours and field days.
7. Cooperation with livestock associations and all other agencies and individuals interested in the betterment of the livestock industry.

GENERAL RECOMMENDATIONS

- ✓ 1. That the United States Department of Agriculture employ an extension range-livestock and grazing specialist for the 17 range States.
2. That the range-livestock handbook for extension workers be revised and published as a separate handbook.
3. That the Extension Studies and Teaching Section, Division of Cooperative Extension, prepare from the county agents' reports for the past 5 years a summary of the most important range-livestock work conducted during this period.
4. That the Forest Service supply county agents in range counties with copies of their Use Book and other data that will give county agents additional information concerning forest-grazing regulations.
5. That the director of grazing, Department of the Interior, place county agents in range counties on the mailing list to receive copies of the *Grazing Bulletin*.⁴
6. That the direct marketing news service on lambs of the Bureau of Agricultural Economics be extended to include direct sales of feeder cattle and wool.
7. We commend:
 - (a) The constructive livestock and meat-grading demonstrations conducted through the capable assistance of the specialists of the United States Department of Agriculture in cooperation with the Extension Service in the Western Range States;
 - (b) The Forest Service and Bureau of Agricultural Economics for participating in and making economic studies to indicate the percentages of public grazing required for stability of ranch properties; and
 - (c) The Farm Credit Administration for making studies of the cooperative marketing of range livestock.

REPORT OF COMMITTEE ON RANGE MANAGEMENT

The committee on range management considered the program outlined at the New Mexico State College conference in 1929, and, in view of changed conditions, made some slight revisions in the program set forth at that time. The program follows:

⁴ Quarterly publication issued by the Division of Grazing, U. S. Department of the Interior. [Processed.]

RANGE MANAGEMENT

1. Range revegetation and maintenance.
 - (a) Proper number of grazing animals.
 - (b) Proper seasonal use.
 - (c) Deferred and rotation grazing.
 - (d) Artificial reseeding.
 - (e) Rodent control.
 - (f) Relative nutritional values of range forages.
2. Control of livestock.
 - (a) Fencing.
 - (b) Water development and conservation.
 - (c) Salting and supplying other mineral deficiencies.
 - (d) Herding and bedding.
 - (e) Headquarters equipment.

The committee feels that there is a need for intensifying or stepping up extension work in range management on the western range lands, both public and private. To meet this need, the committee suggests that consideration be given to increasing personnel in the animal-husbandry field of extension to include technical and practical range-management specialists who understand range conditions, and that in doing this, consideration be given to establishing a range-management specialist in the United States Department of Agriculture at Washington, D. C., to be followed on through the States in the regular organization procedure.

The committee urges continued close cooperation between the State and Federal agencies in their respective fields, concerning a range extension program for the West that will have for its major objectives:

1. Application of sound, acceptable range practices on all grazing lands, both public and private.
2. Integration of the use of western range lands with the use of related agricultural properties.
3. Coordination of the related users of range lands.
4. Dissemination of technical advice and services in range questions to the owners of private range lands.

REPORT OF THE AGRONOMY COMMITTEE ON AGRONOMIC PHASES OF THE RANGE-
CONSERVATION PROGRAM

1. Since it appears that there are agronomic phases to the range problem, the agronomy committee suggests that a clarification be made in each State of the particular fields and responsibilities of each specialist in relation to the extension range program. Furthermore, the committee feels the need of coordination and cooperation in agronomic work between the various State and Federal agencies now interested in range improvement.

2. The committee believes that an intensive program of education, as follows, will effect measurable improvement in range conditions within 5 years:

- (a) The primary use of irrigated land in the range area is for production of feed for livestock.
- (b) The story of grass—how and why it disappears from ranges.
- (c) Practical revegetation methods with emphasis on deferred and rotation grazing, water conservation on the range, and reseeding where this practice seems to be warranted.
- (d) Creation of supplemental pastures by—
 - (1) Reseeding abandoned cropland.
 - (2) Grazing portions of mountain hay meadows or established pastures on irrigated land.
- (e) Development of seed supplies of adapted grasses by production of seed from small acreages and by protection of areas of native grass for seed.
- (f) Development of supplemental feed supplies through improved crop-production methods adapted to ranches, meadow improvement, water spreading to areas suitable for feed production, and creation of feed reserves. (Lack of supplemental feed often causes range damage from grazing too early.)

- (g) Soil conservation and its relation to range improvement and permanent ranching.
 - (h) Education in identification of noxious and poison weeds, and the management of livestock to reduce losses from these weeds on the range.
 - (i) Use of boys' and girls' 4-H Clubs as an educational agency in identification of poisonous plants.
3. Extension workers in agronomy are hindered to some extent in their range work by lack of exact experimental data on—
- (a) Methods of reseeding abandoned land and ranges.
 - (b) Carrying capacities of various grasses under different climatic and soil conditions.
 - (c) Improved strains and varieties of grass and legumes suited to varied conditions.
 - (d) Irrigation and cultural methods on grass meadows.
 - (e) Methods of controlling noxious and poison weeds.

REPORT OF THE FORESTRY COMMITTEE

It is recognized that the fields of range management, forestry, and general agriculture are inseparable parts of the general land-use problem. The maintenance of water supplies and soil fertility are dependent upon an adequate plant cover on range and forest lands alike.

The forestry committee of the Western States Extension Service conference respectfully submits the following recommendations:

1. In view of the serious fire danger in and adjacent to many timber and woodland stands it is recommended that any use of fire in such areas be most carefully planned and carried out in cooperation with responsible fire-protection agencies.
2. Additional range improvement along the following lines, work to be done through the C. C. C. program or other means:
 - (a) Eradication of poisonous plants.
 - (b) Erosion-control plantings.
 - (c) Livestock-shelter plantings.
 - (d) Planting for protection of range reservoirs and other improvements.
 - (e) Snow-distribution plantings.
3. Additional educational effort throughout the West to emphasize the importance of maintaining adequate plant cover of the highest possible utility on range and forest areas.
4. We urge that the forest experiment stations and agricultural experiment stations intensify research on forest and range problems especially to determine—
 - (a) The use of water by plants of various species.
 - (b) The adaptability of trees and shrubs for range-improvement work.
 - (c) The effect of fires on forage and soil resources.
 - (d) Factors involved in the fundamental ecology of western range species.

REPORT OF THE WATER-CONSERVATION (IRRIGATION) COMMITTEE

This conference recognizes that more efficient use of the grazing lands of the West might be brought about by an increased production of livestock forage from irrigated lands, and that increased production might well result from a better conservation of water supply and better methods of irrigation. For this purpose the following program for water conservation and irrigation is recommended:

- I. Conservation of available water supply.
 - A. Improve methods of irrigation by—
 1. Measuring water applied to determine the amount needed in each irrigation.
 2. Developing short runs so that all lands may be equally saturated.
 3. Preventing erosion during irrigation by—
 - (a) Controlling water used.
 - (b) Making furrows along the contour where gradient is sufficient to cause washing.
 - (c) Terracing lands for irrigation of trees and fruit crops.

B. Requirements:

1. Measuring devices:

- (a) Rectangular weirs.
- (b) Trapezoidal weir.
- (c) Parshall flume.

C. Gather data to determine the amount of water to produce optimal amount of crops.

- 1. For each type of crop grown.
- 2. Apply not more than 6 acre-inches for each irrigation.
- 3. Reduce waste run-off to a minimum.

II. Adoption of better irrigation practices.

A. A program better to prepare land for irrigation:

- 1. Recast farm lay-out, if necessary.
- 2. Readjust head ditches and laterals if necessary.

III. Reduction of conveyance losses. (Data gathered on 100 canals indicate a water loss of from 40 to 60 percent from the diversion dam to the farm.)

A. Install measuring devices to determine conveyance loss.

B. Correlate cost of lining leaky parts of canal with value of water to be saved.

C. Outline plan with users of the canal for equality in bearing the cost and receiving the benefit.

D. Study different types of canal line for recommendation.

IV. Control of flood damage and conservation of flood waters for irrigation. (If agriculture is to go on in the West under irrigation, the streams must be reconstructed so that they will be under the control of the farmer and not the farmer subject to the damage of the streams.)

A. Gradually develop a program through small and large reservoirs that will conserve water for economic use that now is running to waste.

B. Construction of farm reservoirs is recommended for better application.

V. Protection of watersheds.

A. Formulate a program with the water users on the watershed that will preserve normal absorption and normal run-off.

B. The grazing of watershed lands must be controlled for irrigation as well as for forage production.

C. In certain localities an acceptable program would be the purchase of lands in connection with the irrigation project.

D. Channels should be kept clean and straight to prevent undue losses by seepage, evaporation, and transpiration.

VI. Economic development and use of underground water.

A. Plan for survey to determine safe yield of underground-water reservoir.

B. Help farmer to plan a well program for complete utilization of water available.

C. Install program for measuring water used from each well development so that at the end of the season the farmer will know the amount of water he has used and the amount to which he is establishing right.

D. Where surface water is available for recharging underground water reservoirs, formulate a program for such processes as are necessary definitely to put the surface water into the underground reservoir where it will be protected from evaporation. It may be conceded that the ground-water supply is stable if it returns to the same static head and water-table level after each year's use, and the measuring devices must be such as to determine this point.

VII. Transmountain diversions.

On many of the undeveloped streams of the West the irrigable land is small in comparison to the water available. In many valleys good soil is available with deficiency in water supply. We favor, wherever it is economically feasible, a transmountain diversion which will allow use of the water on the areas of good soil. The transmountain diversion should include storage, either before diversion or in the valley to which it is carried, whichever proves to be more feasible and economical.

*Range-livestock improvement and range management, Western States and Hawaii:
Projects adopted for immediate emphasis*

Item	Arizona	California	Colorado	Idaho	Nevada	New Mexico	Montana	Oregon	Utah	Washington	Wyoming	Hawaii	Total
General:													
1. Selective breeding, culling, and production	x	---	x	x	---	x	---	x	x	x	x	x	9
2. Greater utilization of products of western farms	---	---	---	x	---	x	---	x	---	x	---	---	4
3. Prevention of livestock losses	x	---	---	---	---	x	---	x	x	x	x	---	6
4. More recognition of the type and extent of market demand	---	---	---	x	---	x	---	x	---	x	x	---	5
Breeding:													
1. More sires of superior type and quality	x	x	x	x	x	x	x	---	x	x	x	x	11
2. Elimination of inferior sires	x	x	---	x	x	x	x	---	x	x	---	---	8
3. Selective mating for production of replacements	x	x	---	x	---	x	---	x	x	x	---	---	7
4. Systematic culling of females and sires	x	x	x	x	x	x	---	x	x	x	x	x	11
5. Definite breeding seasons	x	x	x	x	x	x	---	---	x	x	---	x	9
6. Segregation of yearling heifers on the range	x	x	---	x	x	x	x	---	---	x	---	---	7
7. Dehorning of all market cattle at an early age	x	x	---	x	x	x	---	---	x	x	---	---	7
8. 4-H Club projects involving development of range sires	x	x	---	x	---	x	x	---	---	x	---	---	6
Feeding for growth and maintenance:													
1. Proper time to start feeding	x	x	---	x	x	---	x	x	x	x	x	---	9
2. Proper kind and amounts of supplements	x	x	x	x	x	x	x	x	x	x	x	x	12
3. Maintain reserve feed supplies for emergency	x	x	---	x	x	x	x	x	x	x	x	---	10
4. Minerals	x	x	---	x	x	x	x	---	---	x	x	---	9
Feeding for market:													
1. Make maximum use of locally produced feeds	---	x	x	x	x	x	x	x	---	x	x	---	9
2. Adjust methods, rations, and classes of animals fed, to kinds of finishing feeds available	x	x	---	x	x	---	x	---	---	x	x	---	8
3. Confine 4-H feeding clubs to areas where finishing feeds are available	x	x	---	x	x	---	x	x	---	x	---	---	7
Grazing of cropland and meadowland to—													
1. Relieve the range	---	x	---	x	x	x	x	x	---	x	---	---	7
2. Afford greater opportunity for use of improved production practices	---	x	---	x	x	x	x	---	x	x	---	---	7
3. Aid in expansion of marketing season	---	x	---	x	x	x	---	x	x	x	---	---	7
Prevention of losses:													
1. Parasite control	x	x	x	---	x	x	---	x	---	x	x	x	9
2. Nutrition deficiencies	x	x	---	x	x	x	x	x	---	x	x	---	9
3. Disease prevention and control	x	x	x	---	x	x	---	x	x	x	x	x	10
4. Prevention of shipping losses	x	---	---	x	---	x	---	---	---	x	---	---	4
5. Predatory-animal control	---	---	---	---	x	x	x	x	x	x	x	---	7
6. Poisonous-plant and noxious-weed control	x	x	x	---	x	x	x	---	---	x	x	x	9
7. Exposure	---	---	---	x	x	x	---	---	---	x	---	---	5
8. Starvation	x	---	---	x	x	x	---	---	---	x	---	---	5
Marketing:													
1. Acquaint producers with type and extent of demand in various markets	x	x	x	x	x	x	x	x	---	x	x	---	10
2. Conduct market grading demonstrations to emphasize United States standard grades, and explain their best utilization	---	x	---	x	x	x	x	x	---	x	x	---	8
3. In direct sales, to encourage sorting of animals before inspection by buyers	x	x	---	x	x	x	x	---	---	x	---	---	7
4. Disseminate market information	x	x	x	x	x	x	---	---	x	x	x	x	11
5. Cooperate with home demonstration program in utilization of meat and wool products	x	x	---	x	x	---	x	x	---	x	x	---	8
Ranch management:													
1. Encourage ranch efficiency studies	x	x	x	x	x	x	x	---	x	x	x	---	10
2. Range revegetation and maintenance:													
(a) Proper number of grazing animals	---	x	---	---	x	x	---	---	x	---	---	---	4
(b) Proper seasonal use	---	x	---	---	x	x	---	x	---	x	x	---	6
(c) Deferred grazing and rotation grazing	---	x	x	---	x	x	---	x	---	x	x	x	8
(d) Artificial reseeding	---	x	x	---	x	x	---	x	---	x	x	x	8
(e) Rodent control	---	x	x	---	x	x	---	x	---	x	x	---	7
(f) Relative nutritional values of range forages	---	x	---	---	---	x	---	x	---	x	---	---	4
3. Control of livestock:													
(a) Fencing	---	x	---	---	x	x	---	x	---	x	---	x	6
(b) Water development and conservation	---	x	x	---	x	x	---	x	---	x	x	x	8
(c) Salting	---	---	---	---	x	---	---	---	---	x	---	x	3
(d) Herding	---	---	---	---	---	---	---	---	---	x	---	---	1
(e) Headquarters' equipment	---	x	---	---	x	---	---	---	---	x	---	---	3

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